

BEATING TRAYS—THEIR USE AND CONSTRUCTION

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The beating method of collecting is most useful for collecting spiders and foliage dwelling insects such as beetles, butterfly and moth larvae, bugs and psocids.

Basically, a stout stick is used to beat vegetation, knocking any insects from the foliage on to a spread cloth. Traditional collecting methods such as netting or U.V. light trapping prove unsuccessful for many species. In fact insects of some orders, such as the Psocoptera, cannot be successfully collected without beating.

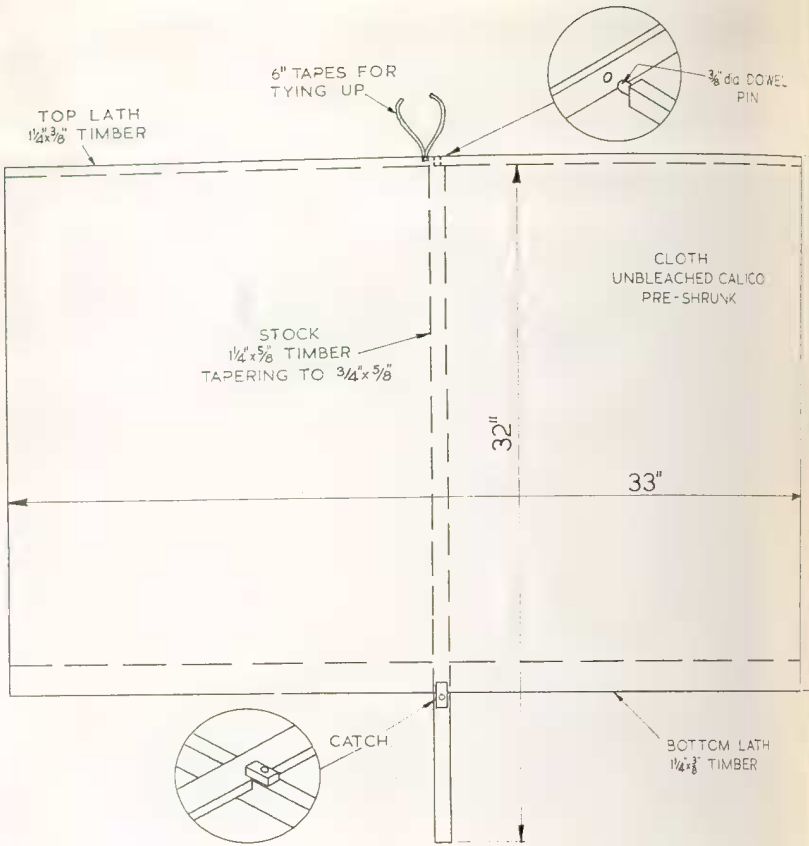
Although any stick can be used to do the beating, a wooden walking stick is perhaps the most convenient. These are light, yet strong, and the curved end is useful for hooking over branches in dense undergrowth, thus allowing these to be shaken without having to force one's way to the inner part of thick bushes.

As it is necessary to have some kind of spread cloth on to which the dislodged insects will fall, the butterfly collector may find it useful, at times, to use his net simply by drawing the bag tight across the hoop. I have collected the minute larvae and pupae of the Zebra Blue, *Syntarucus plinius pseudocassius*, in this way after carefully searching the food-plant in vain. An umbrella is sometimes used as a beating tray, and no doubt was used long before specialised apparatus was designed. However, it has disadvantages, one being that the covering materials used today are not strong enough to withstand the wear and tear of collecting. For continuous use, it is desirable to have a properly constructed beating tray. I have found the following two designs the most practical.

A simple but efficient tray can be constructed as shown in Figs 1 & 2. It is easily collapsed for transportation, light and cheap to build. A piece of unbleached calico is pre-shrunk by washing, then ironed flat and cut to size. Some people prefer a black sheet but I have found unbleached calico more than satisfactory. The sides are hemmed and the top and bottom edges sleeved large enough to take the laths. These are inserted and sewn in as fixtures. Suitable timbers are Californian Redwood or Oregon.

Another easily made tray, this one of my design, is that shown in Figs 3 & 4. One advantage of this tray is that it can be used with one corner forward, thus allowing it to be thrust more easily between limbs in bushy growth.

Pre-shrink unbleached calico and iron smooth. Cut to size and hem all four edges. Cut two strips of calico, or preferably canvas, 2½" x 10" to use as the corner pockets to take ribs 1 & 3. Double each over to give a double thickness 2½" x 5" and hem all four edges. The double thickness provides added strength where the rib ends force against the cloth. Sew these pieces on two diagonally opposite corners of the sheet (Fig. 3). Firmly sew all edges leaving the inner one as the pocket opening. The pocket for rib 2 must be longer, extending to



PLAN

FIG. 1

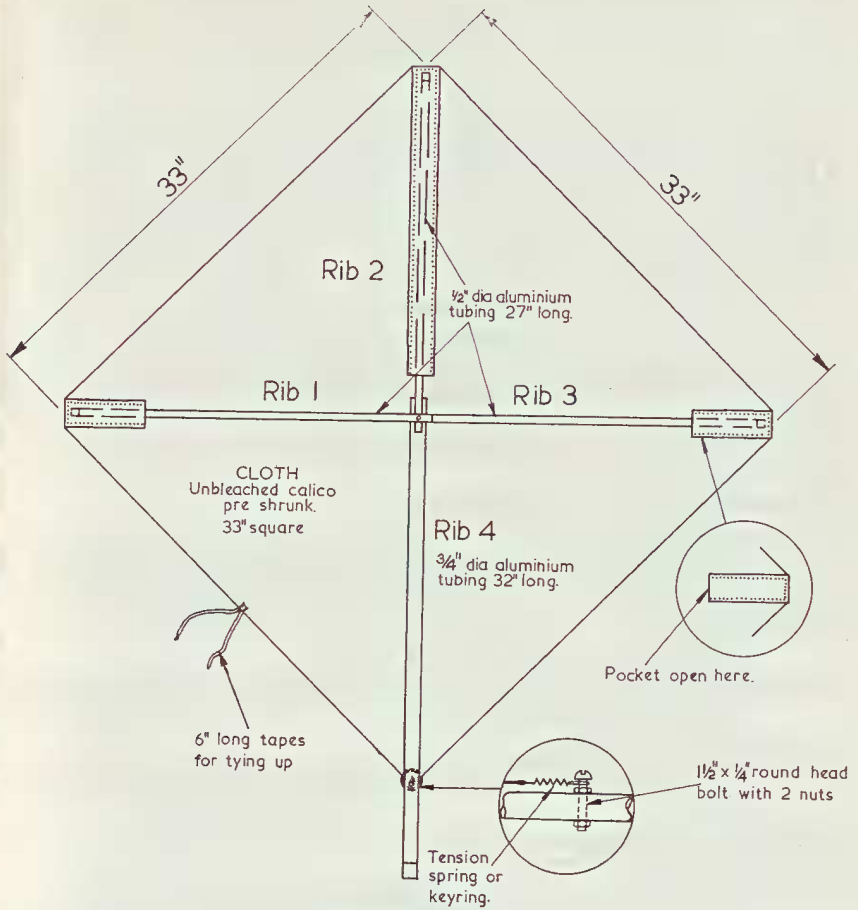


SIDE VIEW

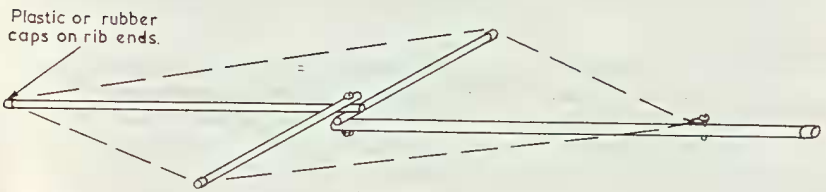
FIG. 2

within 3" of the centre. This is necessary in order to hold the stock firm when spread. Cut a length of calico or canvas 46" x 24", double it and sew as before. To the remaining corner firmly attach a key ring or strong curtain ring of approximately 1" diameter. A strong 1" x 1/4" dia. tension spring may be used instead of the ring to provide a more even tension.

The four ribs are best made from aluminium tubing. Use 1/2" diameter for ribs 1, 2, & 3; 3/4" diameter for rib 4 which will also form the handle. Drill a 1/4" hole 1" from the end of each rib to take a 3" x 1/4"



UNDERSIDE
FIG. 3



RIB ASSEMBLY
FIG. 4

round headed bolt which acts as the pivot. Bolt the four ribs together placing the largest at the bottom. Do not secure the bolt tightly, but allow a little slack. Position the cloth and stretch tightly to find the position for the stud near the handle. If the cloth is too small it may be necessary to cut a little from the rib ends. As the cloth is pulled tight the tray should dip slightly towards its centre. Fix the stud in position and assemble tray to test. Adjust the centre bolt if necessary and cut off any surplus length. Burr both bolt ends to prevent nut screwing off. To fold up, unhook the ring, fold the sheet to the opposite corner, and swing the ribs together. If desired, a calico carrying bag with a draw-string top can be made for this tray to a finished size of 33" x 5".

The two designs mentioned above can be modified to suit individual needs and preferences; the sizes and materials specified are intended as guides only and have been based on the most suitable for general use. There is no doubt that beating for insects can be most rewarding, and introduces the collector to insects rarely encountered otherwise. May I recommend this collecting technique to anyone wishing to expand their entomological interest?

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